

Listing of Claims

1 1. (Original) A light-emitting device, comprising:
2 an active region configured to generate light in response to injected charge;
3 and
4 a current confinement structure located to direct charge into the active region
5 and including a strain compensating layer adjacent an oxide-forming layer.

1 2. (Original) The light-emitting device of claim 1, in which the current
2 confinement structure comprises an additional strain compensating layer adjacent the
3 oxide-forming layer, where the oxide-forming layer is sandwiched between the strain
4 compensating layers.

1 3. (Original) The light-emitting device of claim 1, in which the strain
2 compensating layer comprises gallium, indium and phosphorus.

1 4. (Original) The light-emitting device of claim 1, in which the oxide-
2 forming layer comprises aluminum, gallium and arsenic.

1 5. (Original) The light-emitting device of claim 1, in which the strain
2 compensating layer consists essentially of $\text{Ga}_{1-x}\text{In}_x\text{P}$, where $x \leq 0.5$.

1 6. (Original) The light-emitting device of claim 1, in which the oxide-
2 forming layer consists essentially of $\text{Al}_x\text{Ga}_{1-x}\text{As}$, where $x \geq 0.96$.

1 7. (Original) The light-emitting device of claim 1, in which:
2 the strain compensating layer consists essentially of gallium indium phosphide
3 GaInP; and
4 the oxide-forming layer consists essentially of aluminum gallium arsenide
5 AlGaAs.

1 8. (Original) The light-emitting device of claim 7, in which:
2 the strain compensating layer consists essentially of gallium indium phosphide
3 $\text{Ga}_{1-x}\text{In}_x\text{P}$ in which $x \leq 0.5$; and
4 the oxide-forming layer essentially of aluminum gallium arsenide $\text{Al}_x\text{Ga}_{1-x}\text{As}$
5 in which $x \geq 0.96$.

1 9. (Original) The light-emitting device of claim 1, structured to generate
2 light having a wavelength between 620 nm and 1650 nm.

1 10. (Original) A method of making a strain compensating structure, the
2 method comprising:
3 providing a substrate;
4 forming over the substrate a strain compensating layer of a first semiconductor
5 material;
6 forming an oxide-forming layer of a second semiconductor material
7 juxtaposed with the strain compensating layer to form the strain compensating
8 structure; and
9 oxidizing at least part of the oxide-forming layer.

1 11. (Original) The method of claim 10, in which:
2 the first semiconductor material comprises indium, gallium and phosphorus;
3 and
4 the second semiconductor material comprises aluminum, gallium and arsenide.

- 1 12. (Original) The method of claim 11, further comprising:
2 forming the strain compensating layer using $\text{Ga}_{1-x}\text{In}_x\text{P}$, where $x \leq 0.5$; and
3 forming the oxide layer using $\text{Al}_x\text{Ga}_{1-x}\text{As}$, where $x \geq .96$.
- 1 13. (Original) A method for generating light, the method comprising:
2 forming an optical cavity;
3 locating an active region in the optical cavity, the active region configured to
4 generate light in response to injected current;
5 forming a current confinement structure located to direct current into the active
6 region, including:
7 forming a strain compensating layer of a first semiconductor material
8 including gallium (Ga), indium (In) and phosphorus (P);
9 forming an oxide-forming layer of a second semiconductor material
10 including aluminum (Al) gallium (Ga) and arsenic (As);
11 oxidizing at least part of the oxide-forming layer; and
12 injecting current into the active region using the current confinement
13 structure.
- 1 14. (Original) The method of claim 13, in which the active region is
2 configured to generate light having a wavelength between 620 nm and 1650 nm.
- 1 15. (Original) A strain compensating structure, comprising:
2 a strain compensating layer of a first semiconductor material including gallium
3 (Ga), indium (In) and phosphorus (P); and
4 an oxide-forming layer of a second semiconductor material including
5 aluminum (Al) gallium (Ga) and arsenic (As) juxtaposed with the strain compensating
6 layer.
- 1 16. (Original) The strain compensating structure of claim 15, in which the
2 first semiconductor material consists essentially of gallium indium phosphide $\text{Ga}_{1-x}\text{In}_x$
3 P in which $x \leq 0.5$.

1 17. (Original) The strain compensating structure of claim 15, in which the
2 second semiconductor material consists essentially of aluminum gallium arsenide
3 $\text{Al}_x\text{Ga}_{1-x}\text{As}$ in which $x \geq 0.96$.

1 18. (Original) The strain compensating structure of claim 15, in which:
2 the first semiconductor material consists essentially of gallium indium
3 phosphide (GaInP); and
4 the second semiconductor material consists essentially of aluminum gallium
5 arsenide (AlGaAs).

1 19. (Original) The strain compensating structure of claim 18, in which:
2 the first semiconductor material consists essentially of gallium indium
3 phosphide $\text{Ga}_{1-x}\text{In}_x\text{P}$ in which $x \leq 0.5$; and
4 the second semiconductor material essentially of aluminum gallium arsenide
5 $\text{Al}_x\text{Ga}_{1-x}\text{As}$ in which $x \geq 0.96$.